Manchester Environmental Laboratory

7411 Beach Dr E, Port Orchard, Washington 98366

Case Narrative

April 27, 2014

Subject: Butcher's Scrap and Metal

Sample: 1403066-01, 02, 03

Officer: Kevin Hancock

By: M. Mandjikov MM

PCB Analysis

Analytical Method(s)

The sample was extracted following a modification of EPA Method 3541. The extracts underwent Florisil, sulfur, silica gel, and acid cleanup, modifications of EPA Methods 3620C, 3660B, 3630B and 3665A respectively. The extracts were then analyzed following a modification of EPA Method 8082A.

Holding Times

The sample was received in good condition, within the proper temperature <6° C and was prepared and analyzed within method holding times.

Initial Calibration

The initial calibration (ICAL), initial calibration verification (ICV) and back calculations (BC) were within QC limits.

Continuing Calibration

All continuing calibration verifications (CCVs) were within QC limits.

Method Blanks

No target analytes were detected in the laboratory method blank.

Laboratory Control Samples

The recoveries and relative percent differences (RPD)s of the laboratory control samples were within QC limits.

Surrogates

The DCB surrogate could not be identified in the native samples or their matrix spikes due to the inference caused by the high levels of oil matrix and PCBs present in the sample. This surrogate was only calculated in the blank and LCSs and the alternate surrogate, TMX, was reported. All reported recoveries were within QC limits.

Duplicate Samples

No duplicate samples were prepared with this project.

Matrix Spikes

The concentrations of PCB Aroclors in the samples exceeded 4 times the amount added to the matrix spikes. Therefore, no recoveries were calculated. The RPDs were within QC limits.

Qualitative Identification

The RPDs between analytical columns were within QC limits.

Comments

The following results are estimated and should be considered to be 20% - 50% biased high due to interference from another Aroclor present in the sample.

Table 1

Aroclor 1248	1403066-01	J
Aroclor 1254	1403066-01, 02, 03	

Some Aroclor results could not be determined due to interference from other Aroclors. In these cases, the result is reported as an estimated reporting limit at the level of the interference as follows.

Table 2

Aroclor 1016	1403066-01, 02, 03	UJ
Aroclor 1221	1403066-01, 02, 03	
Aroclor 1232	1403066-02, 03	
Aroclor 1242	1403066-01	
Aroclor 1248	1403066-02, 03	
Aroclor 1260	1403066-01, 02	
Aroclor 1262	1403066-01, 02	

Data Qualifiers

Code	Definition
E	Reported result is an estimate because it exceeds the calibration range.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
N	The analysis indicates the present of an analyte for which there is presumptive evidence to make a "tentative identification".
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.
NAF	Not analyzed for.
NC	Not calculated.
REJ	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.
U	The analyte was not detected at or above the reported sample quantitation limit.
UJ	The analyte was not detected at or above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately measure the analyte in the sample.
bold	The analyte was present in the sample. (Visual aid to locate detected compounds on the analytical reports.)

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Project: Butcher's **Field ID: Sample 1**

Work Order: 1403066
Project Officer: Hancock, Kevin
Initial Vol: 20.166 g
Final Vol: 1 mL

Lab ID #: 1403066-01
Collected: 3/19/2014
Prep Method: SW3541
Analysis Method: SW8082
% Solids: 58.15%

Batch ID: B14C187
Prepared: 3/26/2014
Analyzed: 4/24/2014
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	RL	MDL
12674-11-2	PCB-aroclor-1016	13000	UJ	2100	480
11104-28-2	PCB-aroclor-1221	1100	U	1100	230
11141-16-5	PCB-aroclor-1232	2100	UJ	2100	620
53469-21-9	PCB-aroclor-1242	21000	UJ	5300	690
12672-29-6	**PCB-aroclor-1248**	**47000**	**J**	5300	670
11097-69-1	**PCB-aroclor-1254**	**32000**	**J**	5300	160
11096-82-5	PCB-aroclor-1260	4300	UJ	1100	120
37324-23-5	PCB-aroclor-1262	4300	UJ	1100	46
11100-14-4	PCB-aroclor-1268	1100	U	1100	53

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)		8.53		50-150
877-09-8	**Tetrachloro-m-xylene**	**6.65**	8.53	**78**	30-130

Authorized by: M. Mandjikov **Release Date:** 4/28/14

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Project: Butcher's **Field ID: Sample 2**

Work Order: 1403066
Project Officer: Hancock, Kevin
Initial Vol: 20.404 g
Final Vol: 1 mL

Lab ID #: 1403066-02
Collected: 3/19/2014
Prep Method: SW3541
Analysis Method: SW8082
% Solids: 59.46%

Batch ID: B14C187
Prepared: 3/26/2014
Analyzed: 4/24/2014
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	RL	MDL
12674-11-2	PCB-aroclor-1016	21000	UJ	2100	470
11104-28-2	PCB-aroclor-1221	4100	UJ	1000	230
11141-16-5	PCB-aroclor-1232	8200	UJ	2100	600
53469-21-9	**PCB-aroclor-1242**	**23000**		1000	130
12672-29-6	PCB-aroclor-1248	29000	UJ	1000	130
11097-69-1	**PCB-aroclor-1254**	**16000**	**J**	1000	31
11096-82-5	PCB-aroclor-1260	2100	UJ	1000	120
37324-23-5	PCB-aroclor-1262	2100	UJ	1000	44
11100-14-4	PCB-aroclor-1268	1000	U	1000	52

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)		8.24		50-150
877-09-8	**Tetrachloro-m-xylene**	**3.46**	8.24	**42**	30-130

Authorized by: M. Mandjiker **Release Date:** 4/28/14

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Project: Butcher's **Field ID: Sample 3**

Work Order: 1403066
Project Officer: Hancock, Kevin
Initial Vol: 20.263 g
Final Vol: 1 mL

Lab ID #: 1403066-03
Collected: 3/19/2014
Prep Method: SW3541
Analysis Method: SW8082
% Solids: 60.72%

Batch ID: B14C187
Prepared: 3/26/2014
Analyzed: 4/24/2014
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	RL	MDL
12674-11-2	PCB-aroclor-1016	16000	UJ	2000	460
11104-28-2	PCB-aroclor-1221	4100	UJ	1000	220
11141-16-5	PCB-aroclor-1232	8100	UJ	2000	590
53469-21-9	**PCB-aroclor-1242**	**19000**		1000	130
12672-29-6	PCB-aroclor-1248	20000	UJ	1000	130
11097-69-1	**PCB-aroclor-1254**	**11000**	**J**	1000	31
11096-82-5	PCB-aroclor-1260	1000	U	1000	120
37324-23-5	PCB-aroclor-1262	1000	U	1000	44
11100-14-4	PCB-aroclor-1268	1000	U	1000	51

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)		8.13		50-150
877-09-8	**Tetrachloro-m-xylene**	**3.34**	8.13	**41**	30-130

Authorized by: M. Mandy; Kev **Release Date:** 4/28/14

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Project: Butcher's

QC Type : Method Blank

Work Order: 1403066
Project Officer: Hancock, Kevin
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B14C187-BLK1
Prep Method: SW3541
Analysis Method: SW8082
Source Field ID: Blank

Batch ID: B14C187
Prepared: 3/26/2014
Analyzed: 4/23/2014
Matrix: Sediment/Soil
Units: ug/Kg dw

CAS#	Analyte	Result	Qualifier	RL	MDL
12674-11-2	PCB-aroclor-1016	5.0	U	5.0	1.1
11104-28-2	PCB-aroclor-1221	2.5	U	2.5	0.55
11141-16-5	PCB-aroclor-1232	5.0	U	5.0	1.5
53469-21-9	PCB-aroclor-1242	2.5	U	2.5	0.32
12672-29-6	PCB-aroclor-1248	2.5	U	2.5	0.32
11097-69-1	PCB-aroclor-1254	2.5	U	2.5	0.076
11096-82-5	PCB-aroclor-1260	2.5	U	2.5	0.28
37324-23-5	PCB-aroclor-1262	2.5	U	2.5	0.11
11100-14-4	PCB-aroclor-1268	2.5	U	2.5	0.12

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	**Decachlorobiphenyl (DCB)**	**4.96**	5.00	**99**	50-150
877-09-8	**Tetrachloro-m-xylene**	**3.72**	5.00	**74**	30-130

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Project: Butcher's **QC Type : LCS**

Work Order: 1403066
Project Officer: Hancock, Kevin
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B14C187-BS1
Prep Method: SW3541
Analysis Method: SW8082
Source Field ID: LCS

Batch ID: B14C187
Prepared: 3/26/2014
Analyzed: 4/23/2014
Matrix: Sediment/Soil
Units: ug/Kg dw

Analyte	Result	Spike Level	RL	%Rec	%Rec Limits
PCB-aroclor-1016	**18.6**	25.0	5.0	**74**	50-150
PCB-aroclor-1260	**22.4**	25.0	2.5	**90**	50-150

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	**4.89**	5.00	**98**	50-150
877-09-8	Tetrachloro-m-xylene	**3.76**	5.00	**75**	30-130

Authorized by: M. Mandjikow Release Date: 4/28/14

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Project: Butcher's **QC Type : LCS Dup**

Work Order: 1403066
Project Officer: Hancock, Kevin
Initial Vol: 20 g
Final Vol: 1 mL

Lab ID #: B14C187-BSD1
Prep Method: SW3541
Analysis Method: SW8082
Source Field ID: LCS Dup

Batch ID: B14C187
Prepared: 3/26/2014
Analyzed: 4/23/2014
Matrix: Sediment/Soil
Units: ug/Kg dw

Analyte	Sample Result	Spike Level	%Rec	RPD	%Rec Limits	RPD Limit
PCB-aroclor-1016	**16.6**	25.0	**66**	11	50-150	40
PCB-aroclor-1260	**21.5**	25.0	**86**	4	50-150	40

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)	**4.96**	5.00	**99**	50-150
877-09-8	Tetrachloro-m-xylene	**3.56**	5.00	**71**	30-130

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Project: Butcher's

QC Type : Matrix Spike

Work Order: 1403066
Project Officer: Hancock, Kevin
Initial Vol: 20.114 g
Final Vol: 1 mL

Lab ID #: B14C187-MS1
Prep Method: SW3541
Analysis Method: SW8082
Source Field ID: Matrix Spike
Source Lab ID #: 1403066-02

Batch ID: B14C187
Prepared: 3/26/2014
Analyzed: 4/24/2014
Matrix: Sediment/Soil
Units: ug/Kg dw

Analyte	Result	Spike Level	Source Result	%Rec	%Rec Limits
PCB-aroclor-1016		41.8	0.00	NC	50-150
PCB-aroclor-1260		41.8	0.00	NC	50-150

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)		8.36		50-150
877-09-8	Tetrachloro-m-xylene	4.14	8.36	50	30-130

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Project: Butcher's

QC Type : Matrix Spike Dup

Work Order: 1403066
Project Officer: Hancock, Kevin
Initial Vol: 20.249 g
Final Vol: 1 mL

Lab ID #: B14C187-MSD1
Prep Method: SW3541
Analysis Method: SW8082
Source Field ID: Matrix Spike Dup
Source Lab ID #: 1403066-02

Batch ID: B14C187
Prepared: 3/26/2014
Analyzed: 4/24/2014
Matrix: Sediment/Soil
Units: ug/Kg dw

Analyte	Sample Result	Spike Level	Source Result	%Rec	RPD	%Rec Limits	RPD Limit
PCB-aroclor-1016		41.5	0.00	NC	NC	50-150	40
PCB-aroclor-1260		41.5	0.00	NC	NC	50-150	40

Surrogate Recovery:

CAS#	Analyte	Result	Spike Level	% Rec.	% Rec. Limits
2051-24-3	Decachlorobiphenyl (DCB)		8.31		50-150
877-09-8	Tetrachloro-m-xylene	3.48	8.31	42	30-130

Authorized by: M. Mandy Kee Release Date: 4/28/14